

Patent claims

1. Process for producing antibodies which react
5 specifically with a polypeptide, the nucleic acid
encoding which is known, wherein

10 a) the DNA encoding the polypeptide is expressed in a
host cell which is derived from a mammal using a
vector which possesses at least one sequence
encoding a detection signal, and the expressed
polypeptide is bound to a solid phase with the aid
of the detection signal,

15 b) independently of step a), the DNA encoding the
polypeptide is introduced directly into an animal,
resulting in expression of a polypeptide in the
animal, which expression causes the formation of
20 antibodies against the polypeptide and the
expression vector employed for the genetic
immunization in step b), for the purpose of
preparing the desired antibodies, is also used in
vitro for producing the target protein, and

25 c) the antibodies which are formed in step b) are
reacted with the polypeptide formed in step a) and
detected or enriched.

2. Process according to claim 1, characterized in
that the vector used in step a) possesses, at the C-
30 terminus of the DNA encoding the polypeptide, a
sequence which encodes the detection signal.

3. Process according to claim 2, characterized in
that the detection sequence is selected from the His₆
tag sequence, the hemagglutinin sequence of an influenza
35 virus or the myc tag sequence.

4. Process according to one of the preceding claims, characterized in that the vector encoding the polypeptide possesses a polyadenylation sequence at the C-terminal end of the detection sequence.

5. Process according to one of the preceding claims, characterized in that the vector encoding the polypeptide possesses a strong promoter at the 5' end of the DNA sequence encoding the polypeptide.

6. Process according to claim 5, characterized in that the strong promoter is selected from the group consisting of strong eucaryotic promoters, in particular the elongation factor 1 α promoter or the cytomegalovirus promoter.

7. Process according to one of the preceding claims, characterized in that the polypeptide-encoding DNA, which is introduced directly into an animal in accordance with step b) is present in a vector.

8. Process according to one of the preceding claims, characterized in that the polypeptide-encoding DNA is introduced into the animal in step b) using a gene gun.

9. Process according to one of the preceding claims, characterized in that the animal employed in step b) is a mouse, a rat or a rabbit.

10. Process according to one of the preceding claims, characterized in that, in step b), a genetic adjuvant is administered in addition to the polypeptide-encoding DNA.

11. Process according to claim 10, characterized in that the genetic adjuvant is selected from a group comprising cytokine expression vectors which increase antibody production.

12. Process according to one of the preceding claims, characterized in that suitable cells from an animal which has been immunized in accordance with step b) are used for preparing hybridoma cells for forming monoclonal antibodies.

13. Process according to one of the preceding claims, characterized in that polypeptide formed in step a) is bound to a solid phase by means of the detection signal being bound to an antibody or an antibody fragment which is directed against it.

14. Process according to claim 13, characterized in that the solid phase is microtiter plates, gel spheres or magnetic beads.

15. Process according to one of the preceding claims, characterized in that the antibody formed in step b) is detected, after having been bound to the polypeptide formed in step a), using an anti-antibody which is directed against the antibody.

16. Process according to one of the preceding claims, characterized in that the antibody which is bound to the expressed polypeptide in step c) is released by elution.

17. Process according to one of the preceding claims, characterized in that the detection signal is a sequence which is responsible for membrane anchoring using a GPI residue.

18. Antibody, characterized in that it can be obtained using one of the processes according to claims 1-17.